

(FILE 'USPAT' ENTERED AT 15:20:53 ON 18 AUG 1998)

L1 786550 S PRODUCE
L2 1048 S L1 AND CHLORINE DIOXIDE
L3 291 S L2 AND GENERATOR
L4 225 S L3 AND GENERATOR(P)CHLORINE DIOXIDE
L5 216 S L4 AND WATER
L6 1 S L5 AND GENERATE(P)CHORINE DIOXIDE
L7 471678 S L1 AND PROCESS
L8 1946 S L7 AND PROCESS WATER
L9 295 S L8 AND CHLORINE
L10 10 S L9 AND FRUITS OR VEGETABLES
L11 6 S L10 AND TANK
L12 0 S L11 AND GENERATOR(P)CHLORINE DIOXIDE
L13 12951 S L1 AND FRUITS OR VEGETABLES
L14 493 S L13 AND GENERATOR?
L15 111 S L14 AND TANK
L16 21 S L15 AND CHLORINE
L17 0 S L16 AND CHLORINE DIOXIDE
L18 1573 S CHLORINE DIOXIDE
L19 1401 S L18 AND PROCESS
L20 1338 S L19 AND WATER
L21 78 S L20 AND PROCESS WATER
L22 1 S L21 AND OXIDATION REDUCTION
L23 0 S L22 AND MONITORING
L24 0 S L22 AND LOOP
L25 1 S L22 AND CONTROL
L26 149656 S TANK
L27 91718 S L26 AND WATER
L28 16010 S L27 AND MONITOR?
L29 13196 S L28 AND CONTROL
L30 2803 S L29 AND LOOP
L31 281 S L30 AND CONTROL LOOP
L32 133 S L31 AND GENERATOR
L33 0 S L32 AND CHLORINE DIOXIDE

99/
534-
516
536

FILE 'JPO' ENTERED AT 16:23:45 ON 18 AUG 1998
L34 5727 S FRUITS OR VEGETABLES
L35 8 S L34 AND CHLORINE DIOXIDE
L36 1 S L8 AND TANK
L37 0 S L36 AND CONTROL LOOP

(FILE 'HOME' ENTERED AT 16:24:06 ON 18 AUG 1998)

FILE 'FSTA' ENTERED AT 16:24:44 ON 18 AUG 1998

L1	12876 S PRODUCE
L2	0 S L1 AND CONTAMINANT
L3	27 S L1 AND CONTAMINANT
L4	1 S L3 AND TANK
L5	0 S L4 AND LOOP
L6	0 S L4 AND CHLORINE
L7	186 S CHLORINE DIOXIDE
L8	17 S L7 AND MONITOR?
L9	0 S L8 AND TANK
L10	2 S L8 AND OXIDATION
L11	0 S L10 AND REDUCTION
L12	4 S L8 AND MICROB?

=> dis cit 110 1-10

1. 5,683,724, Nov. 4, 1997, Automated **process** for inhibition of microbial growth in aqueous food transport or **process** streams; Robert D. P. Hei, et al., 424/616; 210/759; 422/28, 29, 82.01, 82.02, 82.03; 426/331, 333, 335, 532; 514/557, 558, 559, 560, 574 [IMAGE AVAILABLE]
2. 5,674,538, Oct. 7, 1997, **Process** for inhibition of microbial growth in aqueous food transport or **process** streams; Keith D. Lokkesmoe, et al., 424/616; 210/759; 422/28, 29; 426/331, 333, 335, 532; 514/557, 558, 559, 560, 574 [IMAGE AVAILABLE]
3. 5,409,713, Apr. 25, 1995, **Process** for inhibition of microbial growth in aqueous transport streams; Keith Lokkesmoe, et al., 424/616; 210/759; 422/28, 29; 426/331, 333, 335, 532; 514/557 [IMAGE AVAILABLE]
4. 5,154,836, Oct. 13, 1992, **Process** for treating contaminants in aqueous-based materials; Thomas J. Clough, 210/747, 721, 724, 758, 763, 904, 908, 909, 911, 912 [IMAGE AVAILABLE]
5. 5,137,744, Aug. 11, 1992, **Process** and system for the improvement of edible fiber and product; Paul M. Cagley, et al., 426/615; 127/43, 44; 162/91, 99, 150; 426/270, 640 [IMAGE AVAILABLE]
6. 5,112,638, May 12, 1992, **Process** for the improvement of edible fiber and product; Paul M. Cagley, et al., 426/640; 127/44; 162/99, 150; 426/270 [IMAGE AVAILABLE]
7. 4,766,113, Aug. 23, 1988, Antimicrobial compositions and methods of using same; Michael H. West, et al., 514/187, 191, 576 [IMAGE AVAILABLE]
8. 4,689,169, Aug. 25, 1987, Dry compositions for the production of **chlorine** dioxide; John Y. Mason, et al., 252/186.24, 187.23; 426/316 [IMAGE AVAILABLE]
9. 4,602,011, Jul. 22, 1986, Antimicrobial compositions and methods of using same; Michael H. West, et al., 514/187, 191, 576 [IMAGE AVAILABLE]
10. 4,547,381, Oct. 15, 1985, Dry compositions for the production of **chlorine** dioxide; John Y. Mason, et al., 426/316; 252/186.2, 186.24, 187.23; 422/5, 29; 423/477; 426/318 [IMAGE AVAILABLE]

S

Set	Items	Description
S1	4939	CHLORINE DIOXIDE
S2	1	S1 AND FRUIT?
S3	1	S1 AND VEGETABLES
S4	1235	S1 AND WATER
S5	238	L4 AND PROCESS
S6	0	S5 AND PROCESS (W) WATER
S7	157	PROCESS WATER
S8	6252	PROCESS (W) WATER
S9	44	S8 AND CHLORINE (W) DIOXIDE
S10	27	L9 AND MICROBIAL
S11	0	S10 AND TANK
S12	0	S10 AND OXIDATION
S13	2	S9 AND OXIDATION
S14	0	S13 AND REDUCTION
S15	0	S9 AND GENERATING
S16	0	S8 AND CHORINE (W) DIOXIDE
S17	44	S8 AND CHLORINE (W) DIOXIDE
S18	5	S8 AND FRUITS

18/9/4 (Item 1 from file: 351)
DIALOG(R)File 351:DERWENT WPI
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010896084
WPI Acc No: 96-393035/199639
XRAM Acc No: C96-123626

Treating **fruits** and contaminants in **process water** - by
removing debris and inhibiting fungal growth by submerging in
process water contg. chlorine dioxide soln.

Patent Assignee: CH20 INC (CHTW-N)
Inventor: IVERSON T; KEITH R E; PRINDLE J
Number of Countries: 021 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
WO 9625049	A1	19960822	WO 95US2128	A	19950217	A23B-007/14	199639 B

Priority Applications (No Type Date): WO 95US2128 A 19950217
Cited Patents: 1.Jnl.Ref; US 3591515; US 4889654; US 5072022; US 5126070
Patent Details:

Patent	Kind	Lan	Pg	Filing Notes	Application	Patent
WO 9625049	A1	E	26			
Designated States (National): CA JP MX NZ US						
Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE						

Abstract (Basic): WO 9625049 A

Treatment of fresh produce to remove debris and inhibit the growth of fungus, comprises submerging the produce in **process water** contg. an effective amt. of a chlorine dioxide soln. The water substantially cleans all debris from the surface of the produce and inhibits the growth of fungus.

The effective amt. of chloride dioxide soln. in the **process water** is >0.1 ppm. The pH of the water is <11. The produce is submerged in the **process water** for 30 secs.. Chlorine dioxide is generated using sodium chlorite and phosphoric acid or sodium chlorite and NaCl with a soln. comprising sodium 2-ethylhexyl sulphate and phosphoric acid.

USE - To treat fresh produce, e.g. fruit and contaminants in **process water**.

ADVANTAGE - Efficiently removes debris and inhibits growth of fungus. It also effectively treats contaminants in **process water**.

Dwg.0/3

Title Terms: TREAT; FRUIT; CONTAMINATE; PROCESS; WATER; REMOVE; DEBRIS;
INHIBIT; FUNGUS; GROWTH; SUBMERGED; PROCESS; WATER; CONTAIN; CHLORINE; DI
; OXIDE; SOLUTION

Derwent Class: D13; D15; E14; E17

International Patent Class (Main): A23B-007/14

International Patent Class (Additional): A23B-007/153

File Segment: CPI

Manual Codes (CPI/A-N): D03-A04; D04-A01; E31-C

Chemical Fragment Codes (M3):

01 C017 C108 C200 C730 C800 C801 C803 C804 C805 C807 M411 M781 M903
M904 M910 Q224 R023 R01896-U

Derwent Registry Numbers: 1896-U

Specific Compound Numbers: R01896-U

18/9/5 (Item 2 from file: 351)
DIALOG(R)File 351:DERWPI WPI
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004614805

WPI Acc No: 86-118149/198618

XRAM Acc No: C86-050318

Equipment for washing fruit and vegetables, etc. - has initial sections
to remove main impurities, and two-section drum with paddles, ladies, and
oppositely-moving water

Patent Assignee: FESHCHENKO N S (FESH-I)

Inventor: FESHCHENKO N S

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Main IPC	Week
SU 1184517	A	19851015	SU 3655041	A	19841024		198618 B

t/9/1

2/9/1 (Item 1 from file: 248)
DIALOG(R) File 248:PIRA
(c) 1998 Pira International. All rts. reserv.

00121286 Pira Acc. Num.: 5831758 Pira Abstract Numbers: 03-84-02353
Title: USE OF CHLORINE DIOXIDE FOR CONTROLLING MICROORGANISMS DURING THE
HANDLING AND STORAGE OF FRESH CUCUMBERS
Authors: Costilow R N; Uebersax M A; Ward P J
Source: J. Food Sci. vol. 49, no. 2, Mar.-Apr. 1984, pp 396-401
ISSN: 0022-1147
Publication Year: 1984
Document Type: Journal Article
Language: English
Pira Subfiles: International Packaging Abstracts (PK)
Journal Announcement: 8408
Abstract: Described is a study designed to determine the usefulness of
chlorine dioxide in preventing the build-up of microorganisms in waters
used for handling cucumbers; reducing the populations of microorganisms
associated with fresh cucumbers; and extending the periods fresh cucumbers
could be stored before serious microbial spoilage became evident. Feeding
rates required to maintain residual levels of chlorine dioxide in various
waters used for handling cucumbers are reported. Comparisons are made of
the relative effects of free chlorine dioxide with those of a stabilised
form, and with hypochlorite.
Descriptors: CHLORINE; **CHLORINE DIOXIDE**; CONTROL; CUCUMBER; DIOXIDE
; FEEDING; FORM; FREE; FRESH; HANDLING; HYPOCHLORITE; MICROORGANISM;
RESIDUAL; SPOILAGE; STABILISED; STORAGE; WATER
Section Headings: **Fruit** and vegetables (3615)

11/9/1 (Item 1 from file: 60)
DIALOG(R)File 60:CRIS/USDA
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09174639
PROJ NO: FLA-PLP-03588 AGENCY : CSRS FLA
PROJ TYPE: HATCH
START: 01 OCT 97 TERM: 30 SEP 02
INVEST: BARTZ JA
PLANT PATHOLOGY
UNIVERSITY OF FLORIDA
GAINESVILLE FLORIDA 32610

SANITATION IN POST HARVEST HANDLING PRACTICES FOR FRESH FRUITS AND
VEGETABLES

PRIMARY CLASSIFICATION					GENERAL CLASSIFICATION	
RPA	ACTVTY	CMMDTY	SCNCE	PRCNT	PRGM	JTC
R404	A4600	C1100	F1112	010%	P3.14	J3A
R404	A4600	C1200	F1112	010%	P3.14	J3A
R404	A4600	C1000	F1112	010%	P3.13	J3A
R404	A4600	C0900	F1112	010%	P3.13	J3A
R404	A4870	C1000	F1112	010%	P3.13	J3A
R404	A4870	C1100	F1112	015%	P3.14	J3A
R404	A4870	C1200	F1112	015%	P3.14	J3A
R404	A5550	C1100	F1112	010%	P3.14	J3C
R404	A5550	C1200	F1112	010%	P3.14	J3C

PRIMARY HEADINGS: R404 Quality Maintenance-Fruit, Vegetables; A4600 Protection Against Diseases, Parasites; A4870 Protection Against Molds, Spoilage; A5550 Food Product Handling and Packaging; C1100 Potatoes; C1200 Vegetables; C1000 Deciduous and Small Fruits and Nuts; C0900 Citrus, Tropical, Subtropical Fruit; F1112 Pathology-Plant

GENERAL HEADINGS: P3.14 Vegetable Crops; P3.13 Fruit; J3A Food Systems; J3C Food Quality and Safety

SPECIAL CLASSIFICATION AND HEADINGS		
S1033	Strawberries	020%
S1261	Tomatoes	035%
S0999	Citrus, Tropical, Subtropical Fruit, Gnl	010%

BASIC 040% APPLIED 040% DEVELOPMENTAL 020%

OBJECTIVES:1. To determine optimal methods for sanitizing packinghouses and packinglines. 2. To evaluate alternative sanitizers. 3. To integrate sanitation with other packinghouse measures to provide improvements in disease control and quality maintenance.

APPROACH: 1. Evaluate effects of water temperature, **chlorine** concentration, solution pH, and solution surface tension on the transfers of microbes among tomatoes in dump tanks and flumes. Test for potential buildups of biofilms, organic matter, and microorganism on packingline equipment such as sponge rollers, belts, etc. 2. Compare **chlorine** with **chlorine dioxide**, ozone, chloramine, and **chlorine**

bromine mixtures for protecting tomatoes from becoming infected or contaminated by microorganisms. Efficacy will be compared in clean versus "soiled" water. Parameters of efficacy will include prevention of contamination as well as sanitizing contaminated products. 3. Evaluate whether unloading methods lead to infiltration of product with water and whether abrupt infiltration can cause contamination. Consider use of chlorinated water in hydrocoolers to cool, wash and sanitize in one operation.

KEYWORDS: **FRUIT** VEGETABLES FOOD FRESH-PRODUCE
POST-HARVEST-LOSSES HANDLING-SYSTEMS FOOD-HANDLING SANITATION FOOD-SAFETY
PACKINGHOUSES FOOD-PACKING DISEASE-CONTROL FOOD-QUALITY QUALITY-MAINTENANCE
CHLORINATION TOMATOES BACTERIAL-CONTAMINATION WASHING FOOD-MICROBIOLOGY
CLEANING-AGENTS

SUPPLEMENTARY DATA: ORG CODE: 001760; INST CODE: 001535; REG: 2;
PROCESS DATE: 970514; PROJECT STATUS: NEW

SUBFILE: CRIS

10/9/1 (Item 1 from file: 5)
DIALOG(R)File 5:BIOSIS PREVIEWS(R)
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11737252 BIOSIS Number: 98337252

Improved Determination of Chlorite and Chlorate in Rinse Water from Carrots and Green Beans by Liquid Chromatography and Amperometric and Conductivity Detection

Bettler M K; Chin H B

National Food Processors Association, 6363 Clark Ave., Dublin, CA
94568-3097, USA

Journal of AOAC International 78 (3). 1995. 878-883.

Full Journal Title: Journal of AOAC International

ISSN: 1060-3271

Language: ENGLISH

Print Number: Biological Abstracts Vol. 100 Iss. 003 Ref. 044976

A method is presented for determining chlorite and chlorate in the presence of interfering organic compounds in rinse water from **vegetables**. Rinse water from cut raw carrots and green beans was fortified separately with chlorite and chlorate, filtered (0.45 μ m), and analyzed by liquid chromatography with amperometric and conductivity detection. Detection limits for chlorite and chlorate in carrot rinse water were 17 and 50 ppb, respectively. Average recoveries from rinse water were 95% for chlorite in a 0.084-1.00 ppm range and 90% for chlorate in a 0.078-1.00 ppm range.

Descriptors/Keywords: RESEARCH ARTICLE; **CHLORINE DIOXIDE**

-TREATED **PRODUCE** TOXICITY; CHLORIDE; ANION-EXCHANGE; ANALYTICAL
METHOD

Concept Codes:

- *10059 Biochemical Methods-Minerals
- *10069 Biochemical Studies-Minerals
- *10504 Biophysics-General Biophysical Techniques
- *13502 Food Technology-General; Methods
- *13504 Food Technology-Fruits, Nuts and Vegetables
- *13530 Food Technology-Evaluations of Physical and Chemical Properties
(1970-)
- *22501 Toxicology-General; Methods and Experimental
- *22502 Toxicology-Foods, Food Residues, Additives and Preservatives

Set	Items	Description
S1	406598	PRODUCE
S2	38935	S1 AND WATER
S3	79	S2 AND PROCESS (W) WATER
S4	0	S3 AND CHLORINE DIOXIDE
S5	0	S3 AND CHLORINE (W) DIOXIDE
S6	160591	CHLORINE
S7	7966	S6 AND DIOXIDE
S8	4404	S7 AND CHLORINE (W) DIOXIDE
S9	111	S8 AND PRODUCE
S10	2	S9 AND VEGETABLE?
S11	1	S9 AND FRUIT
S12	363	S8 AND SODIUM
S13	129	S12 AND CHLORITE
S14	24	S13 AND SODIUM CHLORITE
S15	0	S14 AND PHOSPHORIC
S16	102	S13 AND SODIUM (W) CHLORITE
S17	0	S16 AND PHOSPHORIC
S18	34	S8 AND FUNGUS
S19	0	S18 AND SUBMERGE
S20	0	S18 AND PROCESS (W) WATER
S21	2881993	WATER
S22	157486	S21 AND PROCESS
S23	4802	S22 AND PRODUCE
S24	79	S23 AND PROCESS (W) WATER
S25	0	S24 AND FUNGUS
S26	0	S24 AND CHLORINE (W) DIOXIDE
S27	0	S S24 AND CHLORINE

10/9/1 (Item 1 from file: 240)
DIALOG(R)File 240:PAPERCHEM
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00322678 PAPERCHEM NO: AB6404167
Bleaching of Cellulosic Material
Ow, S. S. K.; Singh, R. P.
PATENT ASSIGNEES: Scott Paper Co. (United States)
PATENT NUMBER: CA 1248710 PATENT DATE: 890117 PATENT CLASS#: 9-3
PATENT APP# - DATE OF APPLICATION
CA 483860 - 850613
SOURCE: Can. pat. 1,248,710. Issued Jan. 17, 1989. 6 claims. 25 p.
Cl.9-3. Filed: Can. appln. 483,860 (June 13, 1985).
PUBLICATION YEAR: 1989
DOCUMENT TYPE: PATENT
LANGUAGES: ENGLISH
An improved process for bleaching wood pulp consists of treating the pulp with chlorine dioxide in combination with hypochlorite in the presence of an acid (carbonic, acetic, nitric, hydrochloric, sulfuric, or **phosphoric** acids), with the end pH of the process being 2.0-2.5. The hypochlorite treatment may precede or follow the chlorine dioxide treatment, and the process is carried out at 48-60 C.
DESCRIPTORS: ACIDS; BLEACHING; CANADA; CHEMICAL PROPERTIES; CHEMICAL TREATMENT; CHLORINE COMPOUNDS; **CHLORINE DIOXIDE**; COMMONWEALTH; ENGLISH; HYPOCHLORITES; INORGANIC ACIDS; INORGANIC COMPOUNDS; INORGANIC SALTS; NORTH AMERICA; ORGANIC ACIDS; ORGANIC COMPOUNDS; OXIDES; PATENTS; PH ; PLPG; PULPS; TEMPERATURE
FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

10/9/2 (Item 2 from file: 240)
DIALOG(R)File 240:PAPERCHEM
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00173328 PAPERCHEM NO: AB5212577
PRODUCTION OF CHLORINE DIOXIDE
Fuller, W. A.; Hooker Chemicals & Plastics Corp
PATENT NUMBER: CA 1112424 PATENT DATE: 811117 PATENT CLASS#: 23-147
PATENT APP# - DATE OF APPLICATION
CA 278407 - 770513
US 689405 - 760524
US 689406 -
US 689407 -
US 712253 -
SOURCE: Can. pat. 1,112,424. Issued Nov. 17, 1981. 8 claims. 23 p.
Cl.23-147. Filed: Can. appln. 278,407 (May 13, 1977). Priority: U.S. appln. 689,405 (May 24, 1976); U.S. appln. 689,406 (May 24, 1976); U.S. appln. 689,407 (May 24, 1976); U.S. appln. 712,253 (May 24, 1976).
PUBLICATION YEAR: 1981
DOCUMENT TYPE: PATENT
LANGUAGES: ENGLISH
This process for producing chlorine dioxide is similar to that described in U.S. pats. 4,049,784 and 4,049,785; cf. ABIPC 48: abstrs. 8529 and 8530, resp.
DESCRIPTORS: ALKALI METAL COMPOUNDS; CANADA; CARBOXYLIC ACIDS; CHEMICAL RECOVERY; CHLORATES; CHLORINE; **CHLORINE DIOXIDE**; COUNTER CURRENT PROCESS; CRYSTALLIZATION; ENGLISH; HALOGEN COMPOUNDS; HALOGENS; HYDROGEN COMPOUNDS; NONMETALS; OXALIC ACID; OXIDES; OXYGEN COMPOUNDS; PATENTS;

PHOSPHORIC ACID; PHOSPHORUS COMPOUNDS; POTASSIUM COMPOUNDS; PROCESS
COLUMNS; PRODUCTION METHODS; RECOVERING; SLURRY; SULFATE; SULFUR COMPOUNDS
; SULFURIC ACID

FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

10/9/3 (Item 3 from file: 240)
DIALOG(R)File 240:PAPERCHEM
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00173318 PAPERCHEM NO: AB5212567
PRODUCTION OF CHLORINE DIOXIDE
Fuller, W. A.; Hooker Chemicals & Plastics Corp
PATENT NUMBER: CA 1115026 PATENT DATE: 811229 PATENT CLASS#: 23-147
PATENT APP# - DATE OF APPLICATION
CA 362591 - 801016
CA 278407 - 770513
US 689405 - 760524
US 689406 -
US 689407 -
US 712253 -
SOURCE: Can. pat. 1,115,026. Issued Dec. 29, 1981. 5 claims. 23 p.
Cl.23-147. Filed: Can. appln. 362,591 (Oct. 16, 1980). Priority: Can.
appln. 278,407 (May 13, 1977); U.S. appln. 689,405 (May 24, 1976); U.S.
appln. 689,406 (May 24, 1976); U.S. appln. 689,407 (May 24, 1976); U.S.
appln. 712,253 (May 24, 1976).
PUBLICATION YEAR: 1981
DOCUMENT TYPE: PATENT
LANGUAGES: ENGLISH
The material presented in this patent, dealing with the generation of
chlorine dioxide, is related to that presented previously in U.S. pats.
4,049,784 and 4,049,785; cf. ABIPC 48: abstrs. 8529 and 8530, resp.
DESCRIPTORS: ALKALI METAL COMPOUNDS; CANADA; CARBOXYLIC ACIDS; CHEMICAL
RECOVERY; CHLORATES; CHLORINE; **CHLORINE DIOXIDE**; COUNTER CURRENT
PROCESS; CRYSTALLIZATION; ENGLISH; HALOGEN COMPOUNDS; HALOGENS; HYDROGEN
COMPOUNDS; NONMETALS; OXALIC ACID; OXIDES; OXYGEN COMPOUNDS; PATENTS;
PHOSPHORIC ACID; PHOSPHORUS COMPOUNDS; POTASSIUM COMPOUNDS; PROCESS
COLUMNS; PRODUCTION METHODS; RECOVERING; SLURRY; SULFATES; SULFUR COMPOUNDS
; SULFURIC ACID
FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

10/9/4 (Item 4 from file: 240)
DIALOG(R)File 240:PAPERCHEM
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00124471 PAPERCHEM NO: AB4808530
PRODUCTION OF CHLORINE DIOXIDE WITH PRODUCT SLURRY METATHESIS
Fuller, W. A.; Hooker Chemicals & Plastics Corp
PATENT NUMBER: US 4049785 PATENT DATE: 770920 PATENT CLASS#: 423/478
PATENT APP# - DATE OF APPLICATION
US 689406 - 760524
US 3974266 - 751007
US 620452 - 750307
US 3976758 -
US 556379 -
SOURCE: U.S. pat. 4,049,785. Issued Sept. 20, 1977. 13 claims. 8 p.
Cl.423/478. Filed: U.S. appln. 689,406 (May 24, 1976). Priority: U.S. pat.
3,974,266 [filed as] U.S. appln. 620,452 (Oct. 7, 1975); U.S. pat.
3,976,758 [filed as] U.S. appln. 556,379 (March 7, 1975).
PUBLICATION YEAR: 1977
DOCUMENT TYPE: PATENT
LANGUAGES: ENGLISH
This patent covers other aspects of the process described in U.S. pat.
4,049,784; cf. ABIPC 48: abstr. 8529.

DESCRIPTORS: ALKALI METAL COMPOUNDS; CARBOXYLIC ACIDS; CHEMICAL REACTIONS
; CHEMICAL RECOVERY; CHLORATES; CHLORIDES; CHLORINE; CHLORINE COMPOUNDS;
CHLORINE DIOXIDE; COUNTER CURRENT PROCESS; CRYSTALLIZATION; HALIDES;
HALOGEN COMPOUNDS; HALOGENS; HYDROCHLORIC ACID; HYDROGEN COMPOUNDS;
MIXTURES; NONMETALS; OXALIC ACID; OXIDES; OXYGEN COMPOUNDS; PATENTS;
PHOSPHORIC ACID; PHOSPHORUS COMPOUNDS; POTASSIUM CHLORIDE; POTASSIUM
COMPOUNDS; PROCESS COLUMNS; PRODUCTION; RECOVERING; RECYCLING; SLURRY;
SULFATES; SULFUR COMPOUNDS; SULFURIC ACID; UNITED STATES; ENGLISH
FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

10/9/5 (Item 5 from file: 240)
DIALOG(R)File 240:PAPERCHEM
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00124470 PAPERCHEM NO: AB4808529
PRODUCTION OF CHLORINE DIOXIDE WITH PRODUCT SLURRY METATHESIS
Fuller, W. A.; Hooker Chemicals & Plastics Corp
PATENT NUMBER: US 4049784 PATENT DATE: 770920 PATENT CLASS#: 423/478
PATENT APP# - DATE OF APPLICATION
US 689405 - 760524
US 3976758 - 750307
US 556379 -
SOURCE: U.S. pat. 4,049,784. Issued Sept. 20, 1977. 24 claims. 8 p.
Cl.423/478. Filed: U.S. appln. 689,405 (May 24, 1976). Priority: U.S. pat.
3,976,758 [filed as] U.S. appln. 556,379 (March 7, 1975).
PUBLICATION YEAR: 1977
DOCUMENT TYPE: PATENT
LANGUAGES: ENGLISH

This invention relates to a process for continuously generating a mixture of chlorine dioxide, chlorine, and sulfate by reacting, in a single vessel, an alkali metal chlorate, a chloride, and a mineral acid (i.e., sulfuric acid or mixtures of sulfuric acid with **phosphoric** and hydrochloric acid; withdrawing the chlorine dioxide and chlorine; and crystallizing alkali metal salt of the mineral acid in the form of an aq. slurry containing minor amounts of chlorate, chloride, and acid values. According to the invention, the slurry is passed into the top of a metathesis column in downward flow, and a stream of aq. metathesis solution is countercurrently passed upward through the column so as to effect reaction of the solution with the alkali metal salt crystals to form salts of the metathesis solution. The chlorate, chloride, and acid values recovered with the solution at the top of the column are recycled to the generator, and the salts of the metathesis solution are recovered at the bottom of the metathesis column. The metathesis solution may be of hydrochloric or oxalic acid, or potassium chloride.

DESCRIPTORS: ALKALI METAL COMPOUNDS; CARBOXYLIC ACIDS; CHEMICAL REACTIONS
; CHEMICAL RECOVERY; CHLORATES; CHLORIDES; CHLORINE; **CHLORINE DIOXIDE**
; COUNTER CURRENT PROCESS; CRYSTALLIZATION; HALIDES; HALOGEN COMPOUNDS;
HALOGENS; HYDROGEN COMPOUNDS; MIXTURES; NONMETALS; OXALIC ACID; OXIDES;
OXYGEN COMPOUNDS; PATENTS; **PHOSPHORIC** ACID; PHOSPHORUS COMPOUNDS;
POTASSIUM CHLORIDE; POTASSIUM COMPOUNDS; PROCESS COLUMNS; PRODUCTION;
RECOVERING; RECYCLING; SLURRY; SULFATES; SULFUR COMPOUNDS; SULFURIC ACID;
UNITED STATES; ENGLISH
FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

10/9/6 (Item 6 from file: 240)
DIALOG(R)File 240:PAPERCHEM
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00088024 PAPERCHEM NO: AB4509183
PULP MILL PROCESSES: PULPING, BLEACHING, RECYCLING
Halpern, M. G
SOURCE: Noyes Data Corp. (Park Ridge, N.J. 07656 & London), c1975: 403 p.
[\$36.00]

The U.S. pat. lit. since 1970 (nearly 200 pats.) is the basis for this compilation of tech. inform. on chem., chemimech., and mech. pulping and various bleaching processes and on the recovery and reuse of spent pulping liquors. Techniques and equipment are described for chip predigestion; monitoring of cooks; pulping of sawdust and nonwoody plants (bagasse, kenaf, cotton linters); kraft and modified kraft (polysulfide, etc.) and other alk. processes; sulfite and other chem. digestions (using Cl dioxide, N dioxide, acetic acid, ethanol, ammonia, **phosphoric**/nitric acids, oxygen, etc.); bleaching (with peroxides, dithionites, oxygen, Cl and Cl cpds., etc.); trmt. of spent bleach liquors; chem. recovery from SSL, black and green liquors, etc.; effluent trmt. for pollution control; flue gas trmt.; heat and by-prod. recovery (e.g., activated carbon); and similar processes. Indexes to inventors, assignees, and pat. no. are appended.

DESCRIPTORS: ACETIC ACID; ACTIVATED CARBON; ALCOHOLS; ALKALINE PULPING; AMMONIA; BAGASSE; BAST FIBERS; BLACK LIQUORS; BLEACHING; BOOKS; CARBOXYLIC ACIDS; CHEMICAL PULPING; CHEMICAL RECOVERY; CHEMICAL TREATMENT; CHLORINE; CHLORINE COMPOUNDS; **CHLORINE DIOXIDE**; COTTON; DITHIONITES; DOCUMENTS; EFFLUENT TREATMENT; ENGLISH; ETHANOL; EXHAUST GAS; FARM CROPS; FATTY ACIDS; FLUE GAS; GAS; GREEN LIQUORS; HALOGEN COMPOUNDS; HALOGENS; HEAT RECOVERY; HYDROGEN COMPOUNDS; KENAF; KRAFT PULPING; LINTERS; MECHANICAL PULPING; MILLS; MONITORING; NATURAL FIBERS; NITRIC ACID PULPING; NITROGEN COMPOUNDS; NITROGEN DIOXIDE; NITROGEN OXIDES; NONMETALS; OXIDES; OXYGEN BLEACHING; OXYGEN COMPOUNDS; OXYGEN PULPING; PATENTS; PEROXIDES; **PHOSPHORIC ACID**; PHOSPHORUS COMPOUNDS; PLANT FIBERS; PLANT RESIDUES; POLLUTION CONTROL; POLYSULFIDE PULPING; PULP MILLS; RECOVERING; SAW DUST; SAW MILL RESIDUES; SEED FIBERS; SEMICHEMICAL PULPING; SPENT LIQUORS; SPENT SULFITE LIQUORS; SULFITE PULPING; SULFUR COMPOUNDS; TEXTILE FIBERS; WASTES; WOOD WASTE

FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

10/9/7 (Item 7 from file: 240)

DIALOG(R)File 240:PAPERCHEM

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00063190 PAPERCHM NO: AB4309419

PLASTIC CEMENTS BASED ON THE 'SLOKRIL-1' POLYESTER RESIN

Balalae, E. G.; Akhmedzhanova, T. K

SOURCE: Bumazh. Prom. no. 9: 19-20 (Sept., 1972). [Russ.]

PUBLICATION YEAR: 1972

DOCUMENT TYPE: JOURNAL ARTICLE

LANGUAGES: RUSSIAN

The Slokril resins are obtained by esterification with methacrylic acid of polyglycidylidian or by polymn. of diallyldian. The expts. described in this report were conducted with Slokril-1, which is of the first type. The cements were obtained by mixing the resin with a filler, such as graphite or quartz meal and a hardener (Co naphthenate). At 18-23 C., the cements were resistant to water, to sulfuric acid, HCl, NaOH, **phosphoric** acid, Cl dioxide, chromic anhydride, and lactic acid. At 100 C. they were resistant to acids with the exception of 30% nitric acid. They were resistant to Cl dioxide and chromic anhydride also at 50 C. The cements can be recommended for lining bleaching towers for Cl dioxide bleaching, and for protection of various parts of equipment and constructions against corrosive media.

DESCRIPTORS: ACID RESISTANCE; ACRYLIC COMPOUNDS; ALKALI RESISTANCE; CARBOXYLIC ACIDS; CEMENT; CHEMICAL REACTIONS; CHEMICAL RESISTANCE; **CHLORINE DIOXIDE**; CONDENSATION; CONSTRUCTION MATERIALS; CORROSION RESISTANCE; ESTERIFICATION; FILLERS; GRAPHITE; HARDENERS; LINERS; METHACRYLIC ACID; MINERALS; OXIDES; OXYGEN COMPOUNDS; PLASTICS; POLYCONDENSATES; POLYESTERS; PROCESS COLUMNS; PRODUCTION; QUARTZ; RUSSIAN; SENSITIVITY; SYNTHETIC POLYMERS; VINYL COMPOUNDS; WATER RESISTANCE

FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

? ds

Set	Items	Description
S1	4813	CHLORINE DIOXIDE
S2	7	S1 AND PHOSPHORIC
S3	5	S2 AND PHOSPHORIC ACID
S4	0	S3 AND SODIUM
S5	0	S2 AND PHOSPHORIC (P) CHLORINE (W) DIOXIDE
S6	0	S2 AND PHOSPHORIC (P) (CHLORINE (W) DIOXIDE)
S7	7	S1 AND PHOSPHORIC
S8	6	S7 AND PHOSPHORIC (W) ACID
S9	0	S8 AND CHLORITE
S10	7	S1 AND PHOSPHORIC

? s sodium chlorite

S11 320 SODIUM CHLORITE
? s s11 and phosphoric

320 S11
96520 PHOSPHORIC
S12 6 S11 AND PHOSPHORIC
? s s12 and chlorine dioxide

6 S12
4813 CHLORINE DIOXIDE
S13 0 S12 AND CHLORINE DIOXIDE
? s s11 and phosphoric

320 S11
96520 PHOSPHORIC
S14 6 S11 AND PHOSPHORIC
? t /9/1-6

14/9/1 (Item 1 from file: 31)
DIALOG(R) File 31:World Surface Coatings Abs
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00368166 WSCA ABSTRACT NUMBER: 83-04535 WSCA ID NUMBER: 164535
Liquid eraser for ball-point and fountain pens, etc.
PATENT ASSIGNEE: ADGER KOGYO CO
4 pp: Jap. Pat. Rept. 1983, Vol 82 No 51, Gp G, 4.
PATENT (NUMBER, DATE): JP 82060393
JOURNAL ANNOUNCEMENT: 8307 WSCA UPDATE CODE: 8300
DOCUMENT TYPE: Patent LANGUAGE: English
SECTION (CODE, HEADING): 52 Paint, etc, Removal

ABSTRACT: The eraser comprises two solns. containing, respectively, (alkali) metal chlorite and/or chlorate, and an inorg. acid or its precursor salt. The former preferably also contains an alkali, e.g. sodium (bi)carbonate.

DESCRIPTORS: INKS; PENS; BALL-POINT PENS; PENS
CHEMICAL NAMES: CHLORITE; ALKALI METAL; SALT; CARBONATE; SODIUM;
CHLORATE; HYDROCHLORIC ACID; **PHOSPHORIC ACID; SODIUM**
CHLORITE

IDENTIFIERS: LIQUID COMPOSITIONS FOR ERASURE OF INKS; LIQUID ERASERS FOR INKS FOR BALL-POINT PENS & FOUNTAIN PENS
ADDITIONAL TERMS (IDENTIFIERS): ALKALI; INORG; METAL; BALL-POINT PEN; ACID; PRECURSOR; RESPECTIVELY; FORMER; SOLN; FOUNTAIN-PEN; G; ERASER; LIQUID; CONTAIN; TWO

14/9/2 (Item 2 from file: 31)
DIALOG(R) File 31:World Surface Coatings Abs

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00365824 WSCA ABSTRACT NUMBER: 83-02193 WSCA ID NUMBER: 162193

Writing instrument.

PATENT ASSIGNEE: ADGER KOGYO CO

4 pp: Jap. Pat. Rept. 1982, Vol 82 No 35, Gp G, 3-4.

PATENT (NUMBER,DATE): JP 82040872

JOURNAL ANNOUNCEMENT: 8304 WSCA UPDATE CODE: 8300

DOCUMENT TYPE: Patent LANGUAGE: English

SECTION (CODE,HEADING): 44 Printing, Image-producing and Recording Materials

ABSTRACT: Blue, yellow, etc. dyes are mixed with an alkali metal chlorite or chlorate, which bleaches the colours in presence of an acidic erasing solution.

DESCRIPTORS: INKS

CHEMICAL NAMES: ALKALI METAL; CHLORITE; ACETIC ACID; CHLORATE;

SODIUM CHLORITE; SULPHURIC ACID; **PHOSPHORIC ACID**

IDENTIFIERS: ERASABLE INKS CONTAINING OXIDANTS & ERASURE BY ACIDS

ADDITIONAL TERMS (IDENTIFIERS): INSTRUMENT; ERASING; ACIDIC; YELLOW;

MIXED; BLEACHES; DYES; PRESENCE; BLUE; SOLUTION; COLOUR; WRITING

14/9/3 (Item 1 from file: 240)

DIALOG(R)File 240:PAPERCHEM

(c) 1998 IPST. All rts. reserv.

00508078 PAPERCHEM NO: AB6512684

Superabsorbent Materials Prepared from Lignocellulosic Materials by Phosphorylation; Fine Structure and Water Absorbency

Saito, N.; Shimizu, Y.; Takai, M.; Hayashi, J.

AUTHOR AFFILIATION: Saito, N. (Hokkaido Forest Products Research Institute (Asahikawa: Japan)); Shimizu, Y. (Hokkaido University (Sapporo: Japan)); Takai, M. (Hokkaido University (Sapporo: Japan)); Hayashi, J. (Hokkaido University (Sapporo: Japan)).

SOURCE: J. Jpn. Wood Res. Soc. 40, no. 9: 937-942 (September 1994). [Jap.; Engl. sum.] cf. ABIPST 63: abstr. 6780.

5 fig., 12 ref., 2 tab.

PUBLICATION YEAR: 1994

DOCUMENT TYPE: JOURNAL ARTICLE

LANGUAGES: JAPANESE

The effects of pretreatment with acidic sodium chlorite on the fine structures of wood meal and the swelling behaviors of phosphorylated products were studied. The pretreatment was quite selective in removing lignin and increasing the crystallinity of the wood meal. Maximum water absorbency of the phosphorylated product (141 g water/g) was obtained with a 3-hr chlorite treatment. After freeze-drying, the water absorbency of the phosphorylated products increased and their crystallinity decreased. The addition of organic solvent to the reaction mixture of urea and **phosphoric** acid (U-PA) increased the phosphorus content and yield of the phosphorylated products. However, the U-PA method was much more effective in increasing water absorbency. The surface area and the volume, rather than the phosphorus content, appeared to contribute to the water absorbency of the phosphorylated products. These results indicate that hydrogelation of the phosphorylated products occurs upon the formation of the hydrophilic fibril.

DESCRIPTORS: ABSORBENTS; ABSORPTION; ABSORPTIVITY; AMIDES; CHEMICAL REACTIONS; CHLORITES; CRYSTALLINITY; HYDROGEN COMPOUNDS; INORGANIC ACIDS; JAPANESE; LIGNOCELLULOSE; MICROSTRUCTURE; **PHOSPHORIC ACID**; PHOSPHORUS COMPOUNDS; PHOSPHORYLATION; PHYSICAL PROPERTIES; PRETREATMENT; RMAT; **SODIUM CHLORITE**; SODIUM COMPOUNDS; SORBENTS; SORPTION; SUPERABSORBENTS; UREA; UREAS; WATER ABSORPTION; WATER SORPTION

FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

14/9/4 (Item 2 from file: 240)
DIALOG(R) File 240:PAPERCHEM
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00195476 PAPERCHEM NO: AB5409265

Bleaching Agents

Uehara, M

PATENT NUMBER: JP 58007498/JP 83007498 PATENT DATE: 830117

PATENT CLASS#: C11D7/54

PATENT APP# - DATE OF APPLICATION

JP 81105251 - 810706

SOURCE: Jap. pat. Kokai 7,498/83. Jan. 17, 1983. 3 p. Cl.C11D7/54. Filed: Jap. appln. 105,251/81 (July 6, 1981).

PUBLICATION YEAR: 1983

DOCUMENT TYPE: PATENT

LANGUAGES: JAPANESE

AVAILABILITY: Document is not available for ordering from IPST

Sodium chlorite reacts with a peroxyphosphosphate to prepare a bleaching agent for pulp and cotton fabrics. Thus, 50 parts 25% aq. sodium chlorite and 50 parts sodium peroxyphosphosphate were stirred at ca. 30 C with cooling for 90 min to give a paste product and dried to form a powdered bleaching agent. An aq. suspension containing 10-15% pulp (whiteness 40) and 5% bleaching agent were mixed, adjusted to pH 3.5 with an acid, and bleached 2 hr at 80 C to pulp whiteness 81. From: C.A. 99, no. 10: abstr. 72,426 (Sept. 5, 1983); copyright Am.Chem.Soc.

DESCRIPTORS: ALKALI METAL COMPOUNDS; BLEACH; BLEACHING; CHEMICAL TREATMENT; CHLORITES; COTTON; FARM CROPS; HALOGEN COMPOUNDS; HYDROGEN COMPOUNDS; JAPAN; JAPANESE; NATURAL FIBERS; ORGANIC SALTS; OXYGEN COMPOUNDS; PATENTS; PEROXY ACIDS; **PHOSPHORIC ACID**; PHOSPHORUS COMPOUNDS; PLANT FIBERS; SEED FIBERS; **SODIUM CHLORITE**; SODIUM COMPOUNDS; TEXTILE FIBERS; WHITENESS

FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

14/9/5 (Item 3 from file: 240)
DIALOG(R) File 240:PAPERCHEM
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00017606 PAPERCHEM NO: AB3907853

NEW COMPOSITIONS BASED ON ALKALINE HALOGENITES

Manufacture de Produits Chimiques Protex

PATENT NUMBER: GB 1121756 PATENT DATE: 680731

SOURCE: Brit. pat. 1,121,756. Issued July 31, 1968. 8 claims. 3 p.

PUBLICATION YEAR: 1968

DOCUMENT TYPE: PATENT

LANGUAGES: ENGLISH

A cpn. which is stable in both dil. and concd. aq. soln. and which in soln. has a pH higher than 10 comprises a halogenite of Na or K (e.g., sodium chlorite) and at least one surface-active agent. The surfactant is a satd. aliphatic or arylaliphatic cpd. having a satd. C chain condensed with an oxyethylene chain comprising at least 8 ethoxy groups and having a terminal OH group which is esterified with a nonoxidizable acid. For example, the surface-active agent can be the K salt of the **phosphoric** diester of nonylphenol condensed with ethylene oxide. The cpn. is of use in bleaching paper pulp and textiles.

DESCRIPTORS: ALKALI METAL COMPOUNDS; BLEACHING; CHEMICAL TREATMENT; CHLORITES; HALOGEN COMPOUNDS; PULPS; **SODIUM CHLORITE**; SODIUM COMPOUNDS; SURFACTANTS; TEXTILES; GREAT BRITAIN; ENGLISH; PATENTS

FILE SEGMENT: AB (IPST Abstract Bulletin non-patents)

14/9/6 (Item 4 from file: 240)
DIALOG(R) File 240:PAPERCHEM
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00014749

PAPERCH NO: AB3904996

NEW COMPOSITIONS BASED ON ALKALINE HALOGENITES

Manufacture de Produits Chimiques Protex SARL

PATENT NUMBER: FR 1453380 PATENT DATE: 660816

SOURCE: Fr. pat. 1,453,380. Issued Aug. 16, 1966. 4 claims. 3 p. [Fr.]

PUBLICATION YEAR: 1966

DOCUMENT TYPE: PATENT

LANGUAGES: FRENCH

The cpns., which contain at least one halogenite, such as Na chlorite, and at least one surface-active cpd. compatible with the halogenite, are used for bleaching textiles, for trmt. of certain textile-sizing agents, and in the paper ind. for pulp bleaching and for control of microbial contamination. The surface active agents compatible with the chlorite (i.e., not oxidized by the chlorite and mutually sol.) are selected among aliphatic and arylaliphatic satd. cpds., the aliphatic chain of which is condensed with an oxyethylene chain contg. at least 8 ethoxy groups, the end OH group being esterified with a stable mineral or org. acid (e.g., **phosphoric** or sulfuric), in the form of its Na or K salt. The pH of the cpns. is strongly alk., preferably 11-11.5.

DESCRIPTORS: ALKALI METAL COMPOUNDS; BLEACHING; CHEMICAL TREATMENT; CHLORITES; HALOGEN COMPOUNDS; PULPS; SIZING; **SODIUM CHLORITE**; SODIUM

S13 129 S12 AND CHLORITE
 ? s s13 and sodium chlorite

 129 S13
 151 SODIUM CHLORITE
 S14 24 S13 AND SODIUM CHLORITE
 ? s s14 and phosphoric

 24 S14
 48486 PHOSPHORIC
 S15 0 S14 AND PHOSPHORIC
 ? s s13 and sodium(w)chlorite

 129 S13
 791685 SODIUM
 14394 CHLORITE
 1919 SODIUM(W) CHLORITE
 S16 102 S13 AND SODIUM(W) CHLORITE
 ? s s16 and phosphoric

 102 S16
 48486 PHOSPHORIC
 S17 0 S16 AND PHOSPHORIC

B - Chem engs

WPI